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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,635	03/28/2006	Yasunori Hattori	2950-060834	9011
28289 7590 03/19/2008 THE WEBB LAW FIRM, P.C. 700 KOPPERS BUILDING 436 SEVENTH AVENUE PITTSBURGH, PA 15219				
EXAMINER SAVAGE, JASON L				
ART UNIT		PAPER NUMBER		
1794				
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03/19/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/573,635

**Applicant(s)**

HATTORI ET AL.

**Examiner**

JASON L. SAVAGE

**Art Unit**

1794

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
- Paper No(s)/Mail Date 20080116
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Replacement Office Action***

In light of the preliminary amendment filed 3-28-06, this Office action will replace the previous action sent 1-9-08. Any inconvenience to applicant is regretted.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3 and 5 recite that the aluminum sheet contains Fe at a ratio (emphasis added) of not more than 1.0%. The use of the term ratio is indefinite since Applicant has not defined what else is used to determine the ratio. For the purposes of Examination, the claim limitation has been treated as meaning the Fe content is not more than 1.0% by mass.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 are rejected under 35 U.S.C. 102(a) as being anticipated by Hattori et al (JP 2005-319481 English Machine Translation).

Hattori teaches a steel/aluminum welded structure comprising an aluminum sheet **2** spot welded to a hot-dip coated aluminum-coated steel sheet **1** wherein the Al coating consists of 3-12% Si and 0.5-5% Fe and an Al-Fe-Si ternary alloy layer formed at an interface between the steel and coating layer (abstract). Regarding the limitation that an area ratio of the joint boundary being 90% or less of Al-Fe, since Hattori teaches the same materials and aluminum coating composition containing Si and Fe, the claimed Al-Fe area ratio would fall within the claimed range of 90% or less.

Regarding claim 2, Hattori teaches the steel substrate contain 0.002-0.020% N which forms an N-enriched surface having an N content of 3% or more (par[0021]).

Regarding claims 3 and 5, the Fe content in the aluminum sheet is preferably 1% or less (par[0022]).

Regarding claims 4 and 6-7, Hattori further teaches that the aluminum sheet **2** may contain 1.5-6.0% Mg and 3.0 or less of Si (par[0023]).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maki'268 (US 2001/0016268) in view of Iwase et al. (JP 2003-145278 English Machine Translation).

Maki'268 teaches hot-dipped aluminum coated steel sheet which has excellent properties after welding (abs). Maki'268 further teaches that the Al coating comprises Si content of 2 to 13% (abs). Maki'268 also teaches that the bath used to form the Al-Si coating layer contains about 2% Fe (par[0090]. As such, Maki'268 teaches an aluminum coating containing 2 to 13% Si and 2% or less of Fe.

Regarding the limitation that the Al-coated steel sheet is spot welded to an aluminum sheet, Maki'268 does not exemplify an embodiment meeting the claim limitations. However, Iwase teaches spot welding aluminum-plated steel sheets and aluminum sheets are known (abstract). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to have spot welded the hot-dipped aluminum coated steel sheet of Maki'268 which has excellent properties after welding to an aluminum sheet since composites of aluminum and aluminum-coated steel sheets are conventional materials joined to form a composite structures by welding.

Regarding the limitation that an area ratio of the joint boundary being 90% or less of Al-Fe, since Maki'268 teaches the same materials and aluminum coating composition containing Si and Fe, the claimed Al-Fe area ratio would fall within the claimed range of 90% or less.

Regarding claim 2, Maki'268 teaches the steel substrate may comprise up to 0.010% N (par[0016]). Although Maki'268 does not explicitly recite that the steel substrate has an N-enriched surface having a concentration of 3% or more of N, it is known to form an N-enriched surface to act as a diffusion restrictor. It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed an N-enriched surface in the steel substrate to act as a diffusion restrictor. Such an enriched surface having diffusion restricting properties would meet the limitation of having an N concentration within the claimed range.

Regarding claims 3-7, Iwase teaches that the Aluminum sheet is JIS5056 Aluminum alloy plate (par[0003]) which contains a maximum of 0.5% Fe and Mg of 4.5-5.6% and Si of 0.3% or less.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON L. SAVAGE whose telephone number is (571)272-1542. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on 571-272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason Savage  
3-11-08

/KEITH D. HENDRICKS/  
Supervisory Patent Examiner, Art Unit 1794